BRUHAT BENGALURU MAHANAGARA PALIKE

Name of work : Detailed Estimation for Establishment of R.O Plant in Ward No.15

14th Finance Works. P Code - P-3110 **Estimate Cost:Rs. 1300000.00**

Sl No	Description of work	No	Dimensions L	Dimensions B	Dimensions D	Quantity	Rate	Unit	Amount
1	2	3	4	5	6	7	8	9	10
1	Earthwork excavation for foundation of buildings, culverts, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. **(P-5, It-2.3)**								
	Basic Rate	178.00							
	Area Weightage 6%	10.68							
	Total	**188.68**							
		2	4.40	0.75	0.75	4.95			
		2	2.40	0.75	0.75	2.70			
				Total Qty		**7.65**	**188.68**	**Cum**	**1443.00**
2	Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement @ 180kgs, with 40mm and down size graded granite metal coarse aggregate @0.85 cum and fine aggregates @0.57 cum machine mixed, concrete laid in layers not exceeding 15 cms, thick well compacted, in **foundation**, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2 **(P-12, It.4.3)**								
	Basic Rate	4695.00							
	Area Weightage 6%	281.70							
	Total	**4976.70**							
		2	4.40	0.75	0.10	0.66			
		2	2.40	0.75	0.10	0.36			
	Floor Area	1	3.50	3.00	0.10	1.05			
				Total Qty		**2.07**	**4976.70**	**Cum**	**10302.00**
3	Providing and constructing granite / trap / basalt size stone masonry in foundationcement mortar 1:6 stone hammer dressed in courses not less than 20 cms high, bond stones at two m, apart in each course including cost of materials, labour, curing complete as per specifications. **(P-23, It.5.6)**								
	Basic Rate	3829.00							
	Area Weightage 6%	229.74							
	Total	**4058.74**							
		2	4.25	0.60	0.60	3.06			
		2	2.45	0.60	0.60	1.76			
				Total Qty		**4.82**	**4058.74**	**Cum**	**19579.00**
4	Providing and constructing granite / trap / basalt size stone masonry in basement cement mortar 1:6 stone chistle dressed in courses not less than 15 cms high, bond stones at two m, apart in each course including cost of materials, labour, curing complete as per specifications. **(P-23, It.5.9)**								
	Basic Rate	4542.00							
	Area Weightage 6%	272.52							
	Total	**4814.52**							
		2	4.05	0.45	0.45	1.64			
		2	2.60	0.45	0.45	1.05			
				Total Qty		**2.69**	**4814.52**	**Cum**	**12967.00**

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1	2	3	4	5	6	7	8	9	10
5	*Providing and constructing precast concrete solid blocks with compressive strength not less than 35 Kg/sqm with cement mortar 1:4 masonry (quoin, Jamb, closer blocks) with solid concrete blocks of size 40x20x20cms conforming to I.S: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications.* ***(P-25, It.5.27)***								
	Basic Rate	*943.00*							
	Area Weightage 6%	*56.58*							
	Total	*999.58*							
	Building	*2*	*3.80*		*3.00*	*22.80*			
		2	*3.00*		*3.00*	*18.00*			
	Parapet	*2*	*3.80*		*0.40*	*3.04*			
		2	*3.00*		*0.40*	*2.40*			
	Steps	*4*	*3.05*		*0.15*	*1.83*			
				Total Qty		***48.07***			
	Deductions:								
	Rolling shutters	*1*	*3.04*		*2.50*	*7.60*			
	Ventilators	*2*	*0.90*		*0.60*	*1.08*			
	Lintles	*2*	*3.80*		*0.20*	*1.52*			
		2	*3.00*		*0.20*	*1.20*			
				Deduction Qty		***11.40***			
				Net Qty		***36.67***	***999.58***	***Sqm***	***36655.00***
6	*Providing and laying in position reinforced cement concrete of design mix M20 with OPC cement @ 320kgs, with 20mm and down size graded granite metal coarse aggregates @0.878cum and fine aggregtes @ 0.459cum, with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008, machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation plinth and ground floor level for roof slabs, staircase, lintles, retaining walls, return walls, walls (any thickness) including attached plasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc., including cost of all materials, labour, HOM of machinery, curing, complete as per specifications.* ***(P-13, It.4.11)***								
	Basic Rate	*5739.00*							
	Area Weightage 6%	*344.34*							
	Total	*6083.34*							
	Plinth Beam	*2*	*3.80*	*0.20*	*0.20*	*0.30*			
		2	*3.00*	*0.20*	*0.20*	*0.24*			
	Lintles	*2*	*3.80*	*0.20*	*0.20*	*0.30*			
		2	*3.00*	*0.20*	*0.20*	*0.24*			
				Total Qty		***1.09***	***6083.34***	***Cum***	***6619.00***
7	*Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specificaitons.* ***(P-15, It.4.31)***								
	Basic Rate	*284.00*							
	Area Weightage 6%	*17.04*							
	Total	*301.04*							
	Plinth Beam Both sides	*4*	*3.80*		*0.20*	*3.04*			
		4	*3.00*		*0.20*	*2.40*			
		4	*3.80*		*0.20*	*3.04*			
		4	*3.00*		*0.20*	*2.40*			
				Total Qty		***10.88***	***301.04***	***Sqm***	***3275.00***

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1	2	3	4	5	6	7	8	9	10
8	Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. **(P-6, It.2.10)**								
	Basic Rate	120.00							
	Area Weightage 6%	7.20							
	Total	**127.20**							
		50% of the Qty Vide Item NO.1				3.83			
				Total Qty		**3.83**	**127.20**	**Cum**	**487.00**
9	Providing and fixing to wall, ceiling and floor galvanised / mild steel tube 50mm dia nominal bore with fittings (medium grade weight 5.24kg/mtr) B class including cost of all materials, labour charges, HOM of equipments and testing complete as per specifications **(P-90, It.13.6)**								
	Basic Rate	504.00							
	Area Weightage 6%	30.24							
	Total	**534.24**							
		4	4.00			16.00			
		3	3.40			10.20			
				Total Qty		**26.20**	**534.24**	**Mtr**	**13997.00**
10	Providing and fixing 6mm Bronze Multi wall poly carbonate sheet for Tubular structure. The work including cost of all materials, labour charges, and hire charges of machineries for cutting, welding, grinding and erection equipments, complete as per specification **(P-48, It.8.27)**								
	Basic Rate	2379.00							
	Area Weightage 6%	142.74							
	Total	**2521.74**							
		1	4.00	3.50		14.00			
				Total Qty		**14.00**	**2521.74**	**Sqm**	**35304.00**
11	Providing and laying in position reinforced cement concrete of design mix M20 with OPC cement @ 27.20kgs, with 12mm and down size graded granite metal coarse aggregates @0.5865cum and fine aggregtes @ 0.391cum, with superplastisiser @0.225lts, machine mixed, well compacted for plain chajja of 8.5 cms. average thickness, upto ground floor level, including cost of all materials, labour, HOM of machinery, finishing, curing, complete as per specifications **(P-14, It.4.20)**								
	Basic Rate	490.00							
	Area Weightage 6%	29.40							
	Total	**519.40**							
	Chajja	1	3.50	0.75		2.63			
		2	1.20	0.75		1.80			
				Total Qty		**4.43**	**519.40**	**Sqm**	**2298.00**
12	Providing and removing centering, shuttering, strutting, propping etc., for chajjas, corbels etc., including edges including cost of all materials, labour complete as per specificaiton. **(P-16, It.4.37)**								
	Basic Rate	263.00							
	Area Weightage 6%	15.78							
	Total	**278.78**							
	Chajja	1	3.50	0.75		2.63			
		2	1.20	0.75		1.80			
				Total Qty		**4.43**	**278.78**	**Sqm**	**1234.00**
13	Providing 18mm thick cement plaster in single coat with cement mortar 1:4, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. **(P-113, It.15.16)**								

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1	2	3	4	5	6	7	8	9	10
	Basic Rate	210.00							
	Area Weightage 6%	12.60							
	Total	222.60							
	Out side Plastering	2	3.50		3.00	21.00			
		2	3.00		3.00	18.00			
				Total Qty		39.00			
	Deductions:								
	Rolling shutters	0.50	3.04		2.50	3.80			
	Ventilators	1	0.90		0.60	0.54			
				Deduction Qty		4.34			
				Ney Qty		34.66	222.60	Sqm	7715.00
14	Providing 18mm thick cement plaster in single coat with cement mortar 1:4, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. **(P-113, It.15.16)**								
	Basic Rate	210.00							
	Area Weightage 6%	12.60							
	Total	222.60							
	Inside Plastering	2	3.50		3.00	21.00			
		2	3.00		3.00	18.00			
				Total Qty		39.00			
	Deductions:								
	Rolling shutters	0.50	3.04		2.50	3.80			
	Ventilators	1	0.90		0.60	0.54			
				Deduction Qty		4.34			
				Ney Qty		34.66	222.60	Sqm	7715.00
15	Providing lime rendering for plastering to wall and ceiling, including cost of materials, labour, curing complete as per specifications **(P-114, It.15.16)**								
	Basic Rate	24.00							
	Area Weightage 6%	1.44							
	Total	25.44							
			Qty Vide Item NO.14			34.66			
				Total Qty		34.66	25.44	Sqm	882.00
16	Providing and applying two coats with oil bound washable distemper of approved brand and shade on wall surface including priming coat with distemper primer after throughly brooming the surface free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications. **(P-116, It.15.49.1)**								
	Basic Rate	66.00							
	Area Weightage 6%	3.96							
	Total	69.96							
			Qty Vide Item NO.14			34.66			
				Total Qty		34.66	69.96	Sqm	2425.00
17	Providing white washing to new wall surface in two coats with lime of approved quality, to give an even shade including cost of materials, labour, complete as per specifications **(P-114, It.15.38)**								
	Basic Rate	8.00							
	Area Weightage 6%	0.48							
	Total	8.48							
			Qty Vide Item NO.13			34.66			
				Total Qty		34.66	8.48	Sqm	294.00

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1	2	3	4	5	6	7	8	9	10
18	Providing and applying enamel metal paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. **(P-120, It.15.74)**								
	Basic Rate	79.00							
	Area Weightage 6%	4.74							
	Total	83.74							
	Rolling shutters	2.25x2	3.04		2.50	34.20			
	Ventilators	1x2	0.90		0.60	1.08			
				Total Qty		35.28	83.74	Sqm	2954.00
19	Providing and fixing Special make glazed Vitrified tiles (Granomite finish) of approved make, quality and colour of size 600x600x10mm thick fixed on existing flooring with a special roffe adhesive for flooring and skirting etc., complete including providing spears at required interval and removing stains etc., complete **(P-107, It.14.43)**								
	Basic Rate	1148.00							
	Area Weightage 6%	68.88							
	Total	1216.88							
	Floor Area	1	3.50	3.00		10.50			
	Wall Portion	2	3.50		1.20	8.40			
		2	3.00		1.20	7.20			
				Total Qty		26.10	1216.88	Sqm	31761.00
20	Providing and laying/fixing cement base, precast, pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring, treads of steps and landing, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of materials, including cutting, griding the edge to half/full round wherever required, labour, curing complete as per specification. **(P-109, It.14.62)**								
	Basic Rate	1053.00							
	Area Weightage 6%	63.18							
	Total	1116.18							
		4	3.05		0.45	5.49			
				Total Qty		5.49	1116.18	Sqm	6128.00
21	Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and **ventilators** side hung/top hung fully openable as per approved drawings using Z angles of 25x33x3mm, weighing 1.419 Kg/m both for outer and inner frames and central mullion section of size 25x46x3mm. weighing 2.28Kg/m duly providing T section 19x19x3mm weighing 0.839 kg/m for glazing of windows not more than 34 cms. c to c including providing and fixing 4mm. thick reeded glass with teakwood beading of required size, all steel sections should confirm to I.S 7452:1990, 4nos. of holdfasts of approved size, section should be cut to length welded and electrically grinded subdividing frames of unit shall be tenonned and revetted into the frames electrically. All the steel surface shall be throughly cleaned free of rust and painted with one coat of anti-corosive paint and finishing with two coats of ready mix paint of approved colour and make including cost of materials, fixtures, labour and HOM of machinery complete as per specifications. **(P-32, It.7.7)**								
	Basic Rate	3596.00							
	Area Weightage 6%	215.76							
	Total	3811.76							
		2	0.90		0.60	1.08			
				Total Qty		1.08	3811.76	Sqm	4117.00
22	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. **(P-17, It.4.46.2) TMT Bars Fe 500**								

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1	2	3	4	5	6	7	8	9	10
	Basic Rate	64635.00							
	Area Weightage 6%	3878.10							
	Total	68513.10							
		1	0.50			0.50			
					Total Qty	0.50	68513.10	Tonne	34257.00
23	Providing and fixing pull and push type rolling shutters of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & pull operations complete including pulling hooks, 4Nos. handles with all fittings and accessories, painted with a coat of red lead paint (without top cover) cost of materials, labour, HOM of machinery complete as per specifications. **(P-31, It.7.5)**									
	Basic Rate	2678.00							
	Area Weightage 6%	160.68							
	Total	2838.68							
		1	3.00		2.50	7.50			
					Total Qty	7.50	2838.68	Tonne	21290.00
24	Cutting of road surface for pipeline trenches and disposing of the excavated stuff as directed including barricading, danger lighting etc,in the cement concrete road(PWD SR 2015-16, P-257, It.37.40)								
	Basic Rate	570.00							
	Area Weightage 6%	34.20							
	Total	604.20							
		1	10.00	0.60	0.30	1.80			
					Total Qty	1.80	604.20	Cum	1088.00
25	Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in hard soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. (PWD SR 2015-16, P-5, It.2.4)								
	Basic Rate	267.00							
	Area Weightage 6%	16.02							
	Total	283.02							
		1	10.00	0.60	0.30	1.80			
					Total Qty	1.80	283.02	Cum	509.00
26	Providing and fixing in trenches galvanised / mild steel tubes (medium grade) 40mm dia nominal bore with all fittings (earth work in trenches to be measured and paid for separately) including cost of all materials, labour charges, HOM of equipments and testing complete as per specifications. (PWD SR 2015-16, P-90, It.13.14)								
	Basic Rate	377.00							
	Area Weightage 6%	22.62							
	Total	399.62							
		1	10.00			10.00			
					Total Qty	10.00	399.62	Mtr	3996.00
27	Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications. (PWD SR 2015-16, P-6, It.2.11)								
	Basic Rate	72.00							
	Area Weightage 6%	4.32							
	Total	76.32							
		Qty Vide Item No.25				1.80			

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1	2	3	4	5	6	7	8	9	10
				Total Qty		**1.80**	**76.32**	**Cum**	**137.00**
28	Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement @ 180kgs, with 40mm and down size graded granite metal coarse aggregate @0.85 cum and fine aggregates @0.57 cum machine mixed, concrete laid in layers not exceeding 15 cms, thick well compacted, in **foundation**, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2 **(P-12, It.4.3)**								
	Basic Rate	4695.00							
	Area Weightage 6%	281.70							
	Total	4976.70							
		1	10.00	0.60	0.10	0.60			
				Total Qty		**0.60**	**4976.70**	**Cum**	**2986.00**
29	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @240kgs with 20mm and down size graded granite metal, coarse aggregate @0.69cum and fine aggregate @0..459 cum machine mixed, concrete laid in layers not exceeding 15 cms, thick well compacted, **in foundation, plinth and cills,** including cost of all materials, labour, HOM of machinery, curing complete as per specifications. **(P-12, It.4.6)**								
	Basic Rate	5084.00							
	Area Weightage 6%	305.04							
	Total	5389.04							
		1	10.00	0.60	0.10	0.60			
				Total Qty		**0.60**	**5389.04**	**Cum**	**3233.00**
	Electrification Work								
30	Groove cutting in wall supplying ..... dia 2mm/2.5mm thick heavy gauge PVC Conduit Pipe with bends, metal junction boxes adhesive paste etc, and bracing U or J hooks and cement plastering up to the surface of the brick level and run with 18 SWG GI fish wire run through out the conduti wherever necessary [(P-2, I-3]								
	Rate	53.00							
		1	30.00			30.00			
				Total Qty		**30.00**	**53.00**	**Mtr**	**1590.00**
31	Supplying of TPST with rewireable porcelain channels in SM encloser Made out of 14 SWG Powder coted paint of approved colour 32 amps Group A (PWD Electrical SR 2014-15, P-51, It-6.5.1)								
	Rate	1868.00							
		1				1.00			
				Total Qty		**1.00**	**1868.00**	**Nos**	**1868.00**
32	Supplying and fixing 20"x20"x2.5" polished wood board made up not less than 15cm thick plank with front plank one end provided for holding at other end fixing the same of the valve using through bolts and nuts [PWD Electrical SR 2014-15, P-51, It-6.6.6)								
	Rate	302.00							
		1				1.00			
				Total Qty		**1.00**	**302.00**	**Nos**	**302.00**
33	Supplying and wiring adopting loop system in existing PVC conduit/casing caping using copper PVC insulated multi strand 2x1.5 Sqmm copper wire with 6 Amps flush type SP control switch shall be fixed on the existing plastic sheet/gang box, the other end of the wires shallbe terminated with sufficient loose length in a wood/PVC round block complete for each outlet. (P-3 I-8)								
	a)Short point upto 3 Mtr from tapping point to out let via switch								
	Rate	176.00							
		1				1.00			
				Total Qty		**1.00**	**176.00**	**Nos**	**176.00**
	b)Long point upto 6 Mtrs upto 10 Mtrs from tapping point to out let via switch								

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1	2	3	4	5	6	7	8	9	10
	Rate	379.50							
		1				1.00			
				Total Qty		1.00	379.50	Nos	380.00
34	Supplying 6A flush/ Projected type socket and 6 amps flush/projected type SP switch either surface/ flush mounting in a existing gang box or in a 4mm thick plastic sheet and fixng over a flush mounted wooden box and wiring using necessary capacity wires as required (6 Amps 5 Way)								
	Rate	116.60							
		1				1.00			
				Total Qty		1.00	116.60	Nos	117.00
35	Wiring for lighting/ power circuit using one of FRLS PVC insulated 1100V grade multistrand copper conductor single core wire in open or concealed system of wiring as per IS 694:1990 & conforming to the attached GTP of Group A. 4 Sqmm. (PWD Ele SR 2010-11, P-9, It-20.2(d)								
	Rate	42.10							
		1				1.00			
				Total Qty		1.00	42.10	Nos	42.00
36	Supplying, fixing, PBBC bakelite straight or slant batten holder and wiring within 60w/230volts lamps (P-13 I-2)								
	Rate	61.60							
		1				1.00			
				Total Qty		1.00	61.60	Nos	62.00
37	Supplying & Fixing LED type panel board indicating lamp with required colour suitable for 220 V AC 50 HZ 12/24 V DC [PWD electrical SR 2010-11, P-40, It-34(b)]								
	Rate	430.00							
		1				1.00			
				Total Qty		1.00	430.00	Nos	430.00
38	Supplying and fixing Porcelain fuse channel with cut out on the existing wooden block & wiring complete 32 amps (PWD Ele SR 2014-15, P-52, It-6.7)								
	Rate	180.00							
		1				1.00			
				Total Qty		1.00	180.00	Nos	180.00
39	Supplying and fixing miniature circuit breakers/ isolators on existing MCB Distribution boards using necessary fixing materials and wiring complete as required 32 Amps								
	Rate	1105.50							
		1				1.00			
				Total Qty		1.00	1105.50	Nos	1106.00
40	Supplying and fixing Class-A (Medium duty) -GI pipe wall thickness not less than 3.25mm on pole/wall/Drain crossing with necessary clamping arrangements for UG Cable of 1.1 KV class 65mm (PWD Ele SR 2014-15, P-68, It-7.12.3)								
	Rate	585.00							
		1	9.00			9.00			
				Total Qty		9.00	585.00	Mtr	5265.00
41	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating in Hard soil etc., complete. complete as per specifications and direction of the Engineer-in-Charge (PWD Electrical SR 2014-15, P-68, It-7.9.2)								
	Rate	106.00							
		1	47.00			47.00			
				Total Qty		47.00	106.00	Mtr	4982.00

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1	2	3	4	5	6	7	8	9	10
42	Supplying laying of 1.1 KV class L.T.U.G Cable having aluminium conductor PVC insulated extruded inner shethed galvanised steel strip (except 2C x 10 Sq.mm wire armoured) confirming to IS-3975:1990 (No. of Strip indicated in GTP) & extruded PVC outer sheathed armoured cable with speicified IS-1554, Part-1:1988 & confirming to the attached GTP of Group A 3.5 core to 25Sqmm (PWD Ele SR 2014-15, P.No.62, It- 7.4.5)									
	Rate	165.60							
		1	20.00			20.00			
				Total Qty		20.00	165.60	Mtr	3312.00
43	Labour charges for Laying of 1.1 KV Class UG cable 6 Sqmm to 16 sqmm (PWD Ele SR 2014-15, P-68, It-7.8.1)								
	Rate	10.80							
		1	20.00			20.00			
				Total Qty		20.00	10.80	Mtr	216.00
44	Supplying and fixing of heavy duty cable glands suitable for UG Cable of 1.1 KV class (Metal only) 25mm dia								
	Rate	72.60							
		2				2.00			
				Total Qty		2.00	72.60	Nos	145.00
45	Supplying and fixing LT cast iron pot heads suitable for 1.1 KV class UG cable filled wiith necessary bitumen / insulating compound complete. With terminals, clamps, bolts nuts and washers etc.complete for 16 Sqmm as per specification (PWD Ele SR 2014-15, P-69, It-7.13.2)								
	Rate	280.00							
		2				2.00			
				Total Qty		2.00	280.00	Nos	560.00
46	Supplying and fixing wiring, earth electrode for grounding conduits IC Cutouts and other equipments on the meter board using 40mm dia 2.90mm thick GI Pipe 2.5 Mtr long buried in a pit..... The pit should be filled with equal proportion of salt and charocoal 150mm alround the pipe to complete depth. The connections from the pipe to the conduit etc, is to be established though GI Wire of size as per ISI Specification 7.3.3 of IS 732 using 12mm dia bolts, nuts, washers and checknuts etc, the pipe shall have 16 through holes of 122 mm dia. (PWD Ele SR 2014-15, P-62, It-7.1)								
	Rate	2727.00							
		1				1.00			
				Total Qty		1.00	2727.00	Each	2727.00
47	Supplying fixing and wiring electronic 10 to 40amps 3 Phase 4 wire Class-1 accuracy energy meter Group A								
	Rate	4532.00							
		1				1.00			
				Total Qty		1.00	4532.00	Each	4532.00
48	Supplying 1 x 4 36/40 watts decorative horizantal type street light fluorescent fitting weather and water proof complete Group A with energy saving Electronic Ballast, etc, locking type brass contact holders with 1 No. of 4 feet 40Watts fluorescent tube comletely wired for use on 230/250 Volts 50 Cycles AC supply with opal reeded Perspex cover at bottom complete fitting								
	Rate	1501.50							
		1				1.00			
				Total Qty		1.00	1501.50	Each	1502.00
49	Supplying and fixing 25/32 mm dia class A GI Pipe bracket up to 2 Mtrs long bent at suitable angle and fixing to this bracket 1 x 4012x 40 watts fluorescent tube street light fitting of all capacities to GI or CI or rail or RCC pole / wall using suitable clamps, bolts and nuts and wiring using suitable capacity wires complete.								

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1	2	3	4	5	6	7	8	9	10
	Rate	671.00							
		12				12.00			
				Total Qty		12.00	671.00	Each	8052.00
	PROVIDING R.O PLANT								
50	Providing Reverse Osmosis system to cover 2000 Litres of High TDS water per Hour								
	Supplying and installation of 2000 LPH RO Drinking water treatment plant comprising of raw water storage tank, Anit scaling dosing system with pump and tank Sand filter activated carbon filter, High pressure pump R.O Membranes, R.O Pressure Tubes, Skid house the complete R.O. Plnant, control panel, chemical cleaning tank, Ph dosing system with pump and Dosing tank product water storage UV sterilizer, interconnecting piping within SKID complete instrumentation with necessary gauges and flow indicator as required in the plant with PH meter etc,.								
	Flow Rate								
	Feed Water	5000 LPH							
	Treated Water	3000 LPH							
	Rejected Water	2000 LPH							
a)	**RAW WATER PUMP:** Purpose to feed the Dual medial Filter at pressure more than 2.0 bars, which is min operating pressure for filter								
b)	**SAND MEDIA FILTER:** Purpose to remove the total suspended solids, dirt, iron and reduce silt density which can foul the members								
c)	**ACTIVATED CARBON FILTER:** Purpose to remove the total color, smell, odor, from the water								
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) Carbon average porosity 50 micron particulate size bed depth: 1500mm Pipelines and accessories: Pipe of PVC 10 Bar tested pressure Testing cock & Pressure gauges at inlet - outlet of system								
	DOSING SYSTEM: Purpose to Dose anti scaling chemical to protect the scaling formation on RO Membrances								
d)	**MICRON FILTER:** Purpose to remove the fine particles up to 05 microns and reduce silt density levels to acceptable level								
e)	**HIGH PRESSURE PUMP:** Purpose to feed the reverse Osmosis Membrane at pressure more than the Osmotic pressure taking into consideration flux rate, flow and recovery								
	RO Membrance Housing: Purpose To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow and recovery								
	R.O CLEANSING SYSTEM								
f)	**ELECTRICAL PANEL:** Purpose:A Control panel is provided as a safety measure for the pumps & other electrical items.								
	Specifications: a) Complete starters, Overload relays, b) Voltameter, Ammeter, MCB's indicating lights c) Rocker switches for Dozers d) Incomers, Auto-Manual Switches								
g)	**INSTRUMENTATION:** Purpose:a) Flow meter: To measure the online flow of water flowtec b) Low pressure switch: To protect RO Pump from dry running c) High pressure switch: To protect RO pump from back pressure d) Pressure Gauges: For Calculate AP for each unit in RO System.								
h)	**PH DOSING SYSTEM:** Purpose to dose sodium Bi-Carbonate for enhances product water SS till the pre-filtration & SS from HPP to the permeate line termination point NRV's Pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis Plant stainless steel tank (2 Kl) Raw Water Tank (5Kl) with stainless steel pipe required for plant erection.								
				Total Qty		1.00	860000.00	Sqm	860000.00
	ELECTRICAL WORK (R.O. PLANT ROOM)								

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1	2	3	4	5	6	7	8	9	10
51	Supplying and wiring adopting loop system in existing PVC conduit/casing caping using copper PVC insulated multi strand 2x1.5 Sqmm copper wire with 6 Amps flush type SP control switch shall be fixed on the existing plastic sheet/gang box, the other end of the wires shallbe terminated with sufficient loose length in a wood/PVC round block complete for each outlet. (P-4, I-8.1.C) Electrical SR 2010-11								
	b)Medium point above 3 Mtrs upto 6 Mtrs from tapping point to out let via switch								
	Rate	175.00							
		2				2.00			
				Total Qty		2.00	175.00	Nos	350.00
	c)Long point above 6 Mtrs upto 10 Mtrs from tapping point to out let via switch								
	Rate	175.00							
		2				2.00			
				Total Qty		2.00	175.00	Nos	350.00
52	Supplying 6A flush / projected type socket and a 6 amps flush/ projected type SP switch eithr surface mounting in a gang box or in a 4mm thick plastic sheet and fixing over a flush mounted wooden box and wiring using necessary capacity wires as required. (P-6, It.12a) Elecl SR:2010-11								
	Rate	91.00							
		4				4.00			
				Total Qty		4.00	91.00	Nos	364.00
53	Supplying and Flush mounting teak wooden box without front plank made of not less than 12mm thick wood after due groove cutting, necessary masonary patch work complete. (P-4, It-6) Elecl SR:2010-11								
	Rate	44.00							
	a)4"x4"x3"	4				4.00	44.00	Nos	176.00
	Rate	98.00							
	b)12"x12"x3"	12				12.00	98.00	Nos	1176.00
	Rate	68.00							
	c)10"x7"x3"	12				12.00	68.00	Nos	816.00
54	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches regulated etc, and fixng on existing wooden or metal box using N.F Screws (P-10, It-22) Elecl SR:2010-11								
	Rate	0.22							
		40000				40000.00	0.22	Sqcm	8800.00
55	Extra for groove cutting, plastering and colour washing for embedding PVC conduit/ GI pipe and plastering finishing the wall upto wall surface complete upto 50mm conduit in brick in wall (P-3, It-7a) Elecl SR:2010-11								
	Rate	14.00							
		2	10.00			20.00	14.00	Rmt	280.00
56	Supplying 20mm dia 2 mm thick heavy guage PVC conduit pipe with suitable size bends, metal junction boxes, adhesive paste etc, and running before concreting the slabs. The conduit should be tied to the reinforcement roads by using binding wire and unused ways of junction boxes and pipe ends should be covered using PVC and enclosures and run with 18 SWG GI fish wire run throughout the conduit wherever necessary (P-2, It-2a) Elecl SR:2010-11								
	Rate	32.00							
		2	10.00			20.00	32.00	Mtr	640.00
57	Supplying, fixing, PBBC bakelite straight or slant batten holder and wiring within 60w/230volts lamps (P-13, It-12a) Elecl SR:2010-11								
	Rate	60.00							
		2				2.00	60.00	Nos	120.00

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1	2	3	4	5	6	7	8	9	10
58	Supply patty type fluorescent tube light fitting of 4'-36/40 watts fluorescent tube fitting, made out of M.S.Sheet and stove enameled with low loss open construction copper wound ferromagnetic ballast, starter, locking type brass contact holders mounted on double fold type sheet base fully wired for use on 230 volts AC supply including fluorescent tube (P-16, It-2a) Elecl SR:2010-11								
	Rate	400.00							
		4				4.00	400.00	Nos	1600.00
59	Wiring for lighting/power circuit using one of PVC insulated 1100v grade, multistrand copper conductor single core cable in open or concealed system of wiring (P-9, It-20lb) Elecl SR:2010-11								
	Rate	15.00							
		6	5.00			30.00	15.00	Rmt	450.00
60	Supplying and fixing cast Aluminium round or oblong type bulk head fitting with GI Wire guard, glass cover with 60/100 watts 230 V lamp as required (P-13, It-5c) Elecl SR:2010-11								
	Rate	219.00							
		4				4.00	219.00	Nos	876.00
61	Supplying and fixing wiring, earth electrode for grounding conduits IC Cutouts and other equipments on the meter board using 40mm dia 2.90mm thick GI Pipe 2.5 Mtr long buried in a pit..... The pit should be filled with equal proportion of salt and charocoal 150mm alround the pipe to complete depth. The connections from the pipe to the conduit etc, is to be established though GI Wire of size as per ISI Specification 7.3.3 of IS 732 using 12mm dia bolts, nuts, washers and checknuts etc, the pipe shall have 16 through holes of 122 mm dia. (PWD Ele SR 2014-15, P-62, It-7.1)								
	Rate	2727.00							
		1				1.00	2727.00	Nos	2727.00
						Sub Total Rs.			1191918.00
62	KRIDL Charges @ 9%								107273.00
63	Miscellaneous & Rounding off:							L/S	809.00
						Total Rs:			1300000.00

(Rupees Thirteen Lakhs only)

CERTIFICATE:

1. *The work spot has been inspected and found to be necessary*
2. *The work spot comes under BBMP Limits*
3. *The provisions made in the estimate are necessary and minimum*
4. *The estimate is based on CSR of 2015-16, PWD Electrical SR 2010-11, 2015-16 & Prevailing Marker rates for Non SR Items*

Assistant Engineer
Ward No.15

Assistant Executive Engineer
T Dasarahalli Sub-Division
Bruhat Bengaluru Mahanagara Palike

Executive Engineer
T Dasarahalli Division
Bruhat Bengaluru Mahanagara Palike

ನಂ: ಇಇ/AS/124/16-17 ದಿನಾಂಕ : 14/03/2017
ರೂ. ಹದಿಮೂರು ಲಕ್ಷಗಳು ಮಾತ್ರ /—
Rs. Thirteen lakhs only /—
ಅಂದಾಜು ಪಟ್ಟಿಗೆ ಆಡಳಿತಾತ್ಮಕ ಮಂಜೂರಾತಿ
ಮುಖ್ಯ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ.
ದಾಸರಹಳ್ಳಿ ವಲಯ, ಬೆಂಗಳೂರು.

ನಂ.ಇಇ/DD/TS/134/16-17 ದಿನಾಂಕ : 21.3.17
ರೂ. Thirteen lakhs only
ಗಳ ಅಂದಾಜು ಪಟ್ಟಿಗೆ ತಾಂತ್ರಿಕ ಮಂಜೂರಾತಿ ನೀಡಿದೆ
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ದಾಸರಹಳ್ಳಿ ವಿಭಾಗ
ದಾಸರಹಳ್ಳಿ ವಲಯ, ಬೆಂಗಳೂರು

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